

Applic. No. 09/894,674  
Amdt. dated July 31, 2006  
Reply to Office action of March 31, 2006

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Remarks/Arguments:

Reconsideration of the application is requested.

Claims 1-3, 4-10, and 12-16 remain in the application. Claims 1, 3, 5, 9, 10, and 16 have been amended. Claims 4 and 11 are being cancelled herewith.

In item 3 on page 2 of the above-identified Office action, claim 16 has been rejected as being indefinite under 35 U.S.C. § 112.

More specifically, the Examiner has stated that there is insufficient antecedent basis for the limitation of "third optical sensor and fourth optical sensor". It is respectfully noted that the third and fourth optical sensors are introduced as further elements in claim 16. Please note that claim 16 recites "and including a third optical sensor and a fourth optical sensor disposed parallel to the first optical sensor and the second optical sensor." Accordingly, no further antecedent basis is needed for the third and fourth sensors. Claim 16 is believed to meet the requirements of 35 U.S.C. § 112, second paragraph, and the claim has not been amended to overcome the rejection.

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It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved.

In item 6 on page 3 of the Office action, claims 1-3 and 7-9 have been rejected as being obvious over Loeffler (U.S. Patent No. 6,429,945 B1) in view of Ohigashi et al. (U.S. Patent No. 4,965,597) (hereinafter "Ohigashi") under 35 U.S.C. § 103.

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and as a whole, the claims have, therefore, not been amended to overcome the references. However, in order to facilitate prosecution of the application claim 1 has been amended to include the subject matter of claim 4.

Since claim 4 was not rejected over Loeffler in view of Ohigashi, claim 1 is believed to be allowable over Loeffler in view of Ohigashi. Since claim 1 is believed to be allowable over Loeffler in view of Ohigashi, dependent claims 2, 3, and 7-9 are believed to be allowable over Loeffler in view of Ohigashi as well.

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Since claim 1 has been amended to include the subject matter of claim 4, claim 1 will be discussed with respect to the following rejection.

In item 7 on page 6 of the Office action, claim 4 has been rejected as being obvious over Loeffler (U.S. Patent No. 6,429,945 B1) in view of Ohigashi (U.S. Patent No. 4,965,597) and further in view of Foote et al. (U.S. Patent No. 6,008,826) (hereinafter "Foote") under 35 U.S.C. § 103.

It is noted that the corporate assignee of the Loeffler reference is also the assignee of the instant application. Therefore, applicants are very familiar with the Loeffler reference.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, *inter alia*:

determining a time span between acquiring the leading edge and acquiring the mark; and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge from the

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time span, the spaced distance between the optical sensors,  
and the velocity.

Furthermore, the instant application discloses that the sensors are adjusted so that both of the sensors simultaneously transmit a signal when the image is position precisely on the sheet. If the signals of the sensors are transmitted at different times, the velocity of the sheet is taken into account and the distance between the leading edge and the image is calculated therefrom.

The Ohigashi reference discloses permanently providing a signal for the web edge using web edge sensor (10). Ohigashi discloses providing a signal for the imprinted image (Figs. 10a-10b). Accordingly, Ohigashi constantly measures the distance between the web edge and the imprinted image.

The Loeffler reference discloses determining the distance between the detection of the web edge and the detection of the printed image and compares the determined distance with a predetermined value.

The Foote reference discloses to first print marks on a belt, which transports the sheets to be printed. The marks (Fig. 4) pass an optical sensor (50, 50') and the distance between the

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different color marks are compared with the ideal mark timing. The difference of the distance between the marks (102) K, C, M, and Y, are representative of the x-position of each color. The second mark set (104) K, C, M, and Y, are representative of the y-position of each color. As shown in Fig. 6 of Foote, the deviation between the timing signal of each mark with the ideal mark timing is used as a correction signal.

Accordingly, Foote discloses eliminating the misalignment between all the different colors, but does not consider the distance between the leading edge of the sheet and the image on the sheet.

It is a requirement for a *prima facie* case of obviousness, that the prior art references must teach or suggest all the claim limitations.

As seen from the above-given remarks, the references do not show or suggest determining a time span between acquiring the leading edge and acquiring the mark, and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge from the time span, the spaced distance between the optical sensors, and the velocity, as recited in claim 1 of the instant application.

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The Ohigashi reference discloses constantly measuring the distance between the web edge and the imprinted image. Ohigashi does not disclose determining a time span between acquiring the leading edge and acquiring the mark, and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge. This is contrary to the invention of the instant application as claimed, which recites determining a time span between acquiring the leading edge and acquiring the mark, and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge from the time span, the spaced distance between the optical sensors, and the velocity.

The Loeffler reference discloses determining the distance between a detection of the leading web edge and the detection of the printed image and compares the two values. Loeffler does not disclose determining the time span between acquiring the leading edge and acquiring the mark, and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge. This is contrary to the invention of the instant application as claimed, which recites determining a time span between acquiring the leading edge and acquiring the mark, and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge from the time span,

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the spaced distance between the optical sensors, and the velocity.

The Foote reference discloses eliminating misalignment between all the different colors. Foote does not disclose determining the time span between acquiring the leading edge and acquiring the mark, and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge. This is contrary to the invention of the instant application as claimed, which recites determining a time span between acquiring the leading edge and acquiring the mark, and calculating, with an evaluation unit, a spaced distance of the mark from the leading edge from the time span, the spaced distance between the optical sensors, and the velocity.

It is respectfully noted that the references applied by the Examiner do not teach or suggest all the claim limitations. Therefore, it is believed that the Examiner has not produced a *prima facie* case of obviousness.

In item 8 on page 7 of the Office action, claim 6 has been rejected as being obvious over Loeffler (U.S. Patent No. 6,429,945 B1) in view of Ohigashi (U.S. Patent No. 4,965,597) and further in view of deJong et al. (U.S. Patent No. 5,510,877) (hereinafter "deJong") under 35 U.S.C. § 103.

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deJong does not make up for the deficiencies of Loeffler, Ohigashi, and Foote. Since claim 1 is believed to be allowable, dependent claim 6 is believed to be allowable as well.

In item 9 on page 8 of the Office action, claims 10, 12, 13, and 16 have been rejected as being obvious over Loeffler (U.S. Patent No. 6,429,945 B1) in view of Ohigashi (U.S. Patent No. 4,695,597) and Foote (U.S. Patent No. 6,008,826) under 35 U.S.C. § 103.

It is appreciatively noted from item 10 on page 12 of the Office action that claims 5, 11, 14, and 15 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The claims have not been amended as indicated by the Examiner, as the claims are believed to be patentable in their existing form.

Claim 10 has been amended to include the subject matter of allowable claim 11. Therefore, claim 10 is allowable. Since claim 10 is allowable, dependent claims 12, 13, and 16 are allowable as well.



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It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-3 and 5-9 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

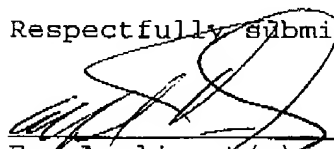
If an extension of time for this paper is required, petition for extension is herewith made.

Petition for extension is herewith made. The extension fee for response within a period of one month pursuant to Section 1.136(a) in the amount of \$120 in accordance with Section 1.17 is enclosed herewith.

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Please charge any other fees which might be due with respect  
to Sections 1.16 and 1.17 to the Deposit Account of Lerner  
Greenberg Stemer LLP, No. 12-1099.

Respectfully submitted,

  
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For Applicant(s)

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AKD:cgm

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